The practices of yam domestication in Benin and Nigeria

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*Guinea yams (*Dioscorea cayenensis *Lam.* D. rotundata *Poir) have been described several times as resulting from a process of domestication of wild yams of the Enantiophyllum section, initially by Burkill (1939) and by Miege (1952) and later, on a more elaborated way, by Hamon (1987) and Terauchi* et al. *(1992). It is only recently that research institutions realized that the domestication of wild yam is still an active process. The first attempt to clarify the techniques of domestication used by the African farmers in West Africa was conducted in 1995 in northern Benin within the Bariba ethnic group (Dumont and Vernier, 2000). In order to obtain more global vision of yam domestication the same study was extended to other yam grower ethnic groups in Benin and Nigeria.*


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Study Methodology

In Benin 614 farmers in 67 villages belonging to 4 other major yam producing ethnic groups (Bariba, Mahi-Fon, Nago and Yom) were interviewed on their knowledge of wild yam and techniques of domestication (Fig. 1). In Nigeria 6 states have been selected and 296 farmers from 7 major ethnic groups in 56 villages interviewed.

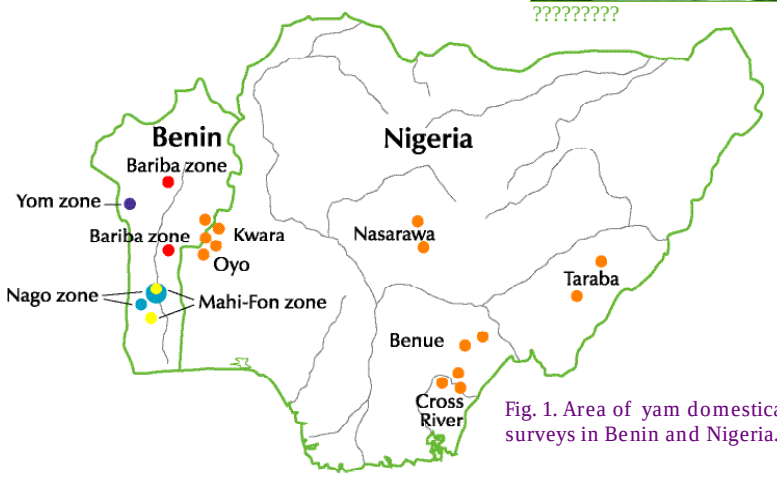

Fig. 1. Area of yam domestication surveys in Benin and Nigeria.

Results

The knowledge of wild yams is still alive even amid farmers who have never domesticated yam (Tables 1 and 2).

Table 1. Knowledge of wild yams and domestication in Benin.

Ethnic groups	Bariba (S)	Bariba (N)	Yom	Nago	Fon
Number of farmers questioned	50	100	101	208	155
Number of villages	3	3	20	22	13
Question (answers in % of respondents)					
Know the diversity of wild yams	42	84	99	93	66
Consume wild yams	46	92	55	56	70
Use wild yams for medicine	na	na	18	10	2
Know techniques of domestication	44	47	78	91	74
Can describe the technique of domestication	na	na	22	39	31
Practice techniques of domestication (presently or in a recent past)	8	3	9	16	13
Na: no answer					

Table 2. Knowledge of wild yams and domestication in West and East Nigeria.

States	Benue	Cross River	Nasarawa	Taraba	Oyo	Kwara
Number of farmers questioned	45	50	50	51	50	50
Number of village	23	7	10	6	5	5
Question (answers in % of respondents)						
Know the diversity of wild yams	100	96	94	100	100	100
Consume wild yams?	95	54	94	86	75	84
Use wild yams for medicine	27	39	10	0	2	35
Know techniques of domestication	41	37	48	67	83	88
Can describe the technique of domestication	16	10	18	53	62	77
Practice techniques of domestication	15	6	16	43	0	20

In the two countries the techniques of domestication described (Tables 3 and 4) are very similar and the domesticated wild yam belong either to *D. abyssinica* in the northern part of the studied area (drier savannah zone) or to *D. praehensilis* in the southern part (humid savannah).

Table 3. Techniques used for the process of domestication according to declaration of farmers who practice domestication in percent of respondents.

Zone	Bariba		Yom	Nago	Fon
Technique said as Necessary in first year	North region	South region			
Number of respondents	-	-	11	58	34
Planting only the head of the tuber	96	100	36	0	3
Introduction of an obstacle under seed tubers	65	82	55	36	0
Double harvesting/milking	34	18	36	11	0
Minimum duration for ennoblement (in 3 years)	-	-	2.88	2.93	2.85

Table 4. Techniques used for the process of domestication according to declaration of farmers who practice domestication in percent of respondents.

	Benue		Cross River		Nasarawa		Taraba		Kwara	
Major ethnic groups	TIV		Mbube Bette		Eggon, Koro		Mumye		Bariba	
Questions (Necessary, Optional)	N	Op	N	Op	N	Op	N	Op	N	Op
Number of respondents	8		8		9		27		39	
Planting only the head of the tuber	86	14	29	57	11	33	22	78	0	100
Introduction of an obstacle under the seed tuber	0	0	0	0	0	11	7	7	42	47
Double harvesting/Milking	0	100	0	14	11	44	74	7	8	70

The percentage of interviewed farmers who are domesticating or have recently domesticated varies from 3 to 14%. The domestication process leads mostly to early maturing cultivars, which are conducted in double-harvest systems.

But generally speaking the practice of domestication is decreasing especially in the regions where commercial yam production is well developed.

Conclusion

The domestication of yam is always an active process in many regions of Benin and Nigeria. The knowledge of the uses of wild yams and the techniques needed to transform them into cultivated forms of *D. rotundata* are still very common among yam producers in both countries.

The understanding of the domestication process by the scientific community is still very limited and much more research is necessary to clarify it. Several studies using biotechnological techniques are in progress and should soon bring a greater understanding of what happens during the ennoblement of yams. It's also clear that the taxonomy of wild yams related to *D. rotundata* should be reviewed.

Références

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